DOCKET NO. D-1993-063-3

DELAWARE RIVER BASIN COMMISSION

Bridgeport Disposal, LLC
Industrial Wastewater Treatment Plant
Logan Township, Gloucester County, New Jersey

PROCEEDINGS

This docket is issued in response to an application submitted to the Delaware River Basin Commission (DRBC or Commission) by Bridgeport Disposal, LLC (Bridgeport Disposal) on October 1, 2010 (Application), for renewal of an industrial wastewater treatment plant (IWTP) approval. The New Jersey Department of Environmental Protection (NJDEP) issued draft New Jersey Pollutant Discharge Elimination System (NJPDES) Permit No. NJ0005420 for the IWTP on December 9, 2011.

The Application was reviewed for approval under Section 3.8 of the *Delaware River Basin Compact*. The Gloucester County Planning Board has been notified of pending action. A public hearing on this project was held by the DRBC on March 7, 2012.

A. DESCRIPTION

1. Purpose. The purpose of this docket is to renew and update the approval of the existing Bridgeport Disposal IWTP. The update includes modifying the DRBC approval to reflect the current projected long-term average flow of 0.61 million gallons per day (mgd). No modifications to the IWTP facilities are proposed.

2. Location. The Bridgeport Disposal IWTP is located just south of U.S. Route 322 and north of Raccoon Creek in Logan Township, Gloucester County, New Jersey. The IWTP will continue to discharge to the tidal portion of Raccoon Creek, approximately three (3) miles upstream of its confluence with Delaware River, in Water Quality Zone 4 of the Delaware River at River Mile 80.66 – 2.8 (Delaware River – Raccoon Creek).

The Bridgeport Disposal facility discharges to Water Quality Zone 4 of the Delaware River through five (5) outfalls, located as follows:

OUTFALL NO.	LATITUDE (N)	LONGITUDE (W)
001A (IWTP)	39° 47' 13.5"	75° 21' 19.3"
001B (Emergency)	39° 47' 17.1"	75° 21' 17.7"
002A (Stormwater)	39° 47' 9"	75° 21' 12.4"
003A (Stormwater)	39° 47' 18.7"	75° 21' 15.5"
004A (Stormwater)	39° 47' 18.3"	75° 21' 0.3"

3. Area Served.

The docket holder's IWTP serves only the docket holder's facility. The IWTP receives wastewater flows from onsite sources, including domestic sanitary wastewater, groundwater from an onsite abatement well system, and landfill stormwater runoff and leachate from a Corrective Action Management Unit (CAMU) associated with a landfill located on-site. Historically, the facility operated as a hazardous waste treatment, storage, and disposal (TSD) facility, accepting off-site hazardous wastes for treatment; however, the facility stopped accepting, storing, and treating off-site hazardous wastes for discharge in 2001. Currently, the landfill receives waste from the remediation of on-site incinerator sludge lagoons.

For the purpose of defining the Area Served, the Application is incorporated herein by reference consistent with conditions contained in the Decision section of this docket.

4. Physical features.

a. Design criteria. The Bridgeport Disposal IWTP treats domestic sanitary wastes, groundwater from the onsite abatement groundwater well system, and CAMU stormwater runoff and leachate through a biological treatment system and an air stripper. An average flow of 0.35 mgd of impacted groundwater pumped from the on-site abatement well system is sent for treatment to the air stripper, hydraulically designed for 0.42 mgd. Approximately 2,000 gallons per day (gpd) of domestic sanitary wastewater generated on-site and intermittent CAMU stormwater runoff and leachate (approximately 16,000 gpd) is sent to the activated sludge biological treatment system, which has a hydraulic capacity of 0.36 mgd. Since the domestic wastewater flow is so small and the landfill runoff is intermittent, a portion of the air stripper treated effluent flow (approximately 100,000 gpd) is sent to the activated sludge treatment system to maintain hydraulics of the biological system. The treated wastewater streams (air stripper effluent and biological treatment system effluent) are joined in storage tanks for intermittent discharge to Raccoon Creek during outgoing tide periods through a submerged outfall (Outfall 001A) that features a multi-port diffuser. The outfall/diffuser is designed to accommodate a maximum flow of 6,500 gallons per minute (gpm), and is permitted by NJDEP to discharge during a 2.25 hour-interval of ebb tide; therefore the hydraulic capacity of the outfall is 2.0 mgd. The outfall/diffuser is designed to improve mixing and dilution of the effluent, which reduces the acute toxicity mixing zone.

The discharge from Outfall 001A is intermittent and occurs approximately three (3) days per week. The docket holder submitted discharger data from 2009 with their NJPDES renewal application that indicates discharge from Outfall 001A occurred on 156 days in 2009, with a long-term average flow of 0.61 mgd per discharge event and a daily maximum flow in 2009 of 0.839 mgd (maximum discharge event).

Note: The previous docket (No. D-1993-063-2) approved a long-term average discharge of 0.47 mgd for the IWTP discharge. The design capacity of the air stripper is 0.42 mgd and the biological system is 0.36 mgd, and therefore the IWTP can treat a total of 0.78 mgd. However, due to the intermittent nature of the discharge and the fact that a portion of the air stripper treated effluent is directed to the biological system, this docket (No. D-1993-063-3) updates the DRBC approval to reflect the current long-term average discharge of 0.61 mgd for the IWTP, based on actual current IWTP flow data.

Outfall No. 001B is an emergency outfall for the IWTP, consisting of a Parshall Flume, and can be used if Outfall No. 001A is not operational. According to the docket holder, Outfall No. 001B has not been operated for 15 years and they do not plan to discharge from this outfall; however, they are requesting to keep the outfall included in the approval for emergency reasons. The remaining outfalls (Nos. 002A, 003A, and 004A) are stormwater outfalls. Prior to discharge from the stormwater outfalls, on-site stormwater runoff is collected and held in tanks pending analysis. If the analysis indicates that requirements set forth in the NJPDES permit are met, stormwater is permitted to be discharged from these outfalls; if the requirements are not met, stormwater is diverted to the treatment system for treatment prior to discharge.

b. Facilities. The facility includes 21 groundwater abatement wells that pump impacted groundwater to the air stripper treatment system. The activated sludge biological treatment system includes an activated sludge reactor (including aeration chamber, clarifier, and effluent well) along with a sludge digestor. The two (2) treatment systems (air stripper and biological system) discharge to three (3) storage tanks for cyclical discharge through an approximately 500-foot long, subsurface outfall pipe that includes a 20-foot long diffuser with four (4) 8.125-inch diameter discharge ports spaced equidistant apart.

Excess sludge from the biological system is digested and returned to the activated sludge reactor, and therefore no sludge is currently sent off site for disposal; however, the facility will continue to be permitted by NJDEP to haul waste sludge off-site by a licensed hauler for disposal at a State-approved facility.

The facility was formerly a TSD facility and operated a high temperature incinerator for treatment of the hazardous wastes, along with the use non-contact cooing water for process water in the treatment facilities. The TSD services are no longer in service; closure of the facility began in May 2001.

No modifications to the IWTP facilities are proposed.

Prior facilities and processes for the IWTP have been described in the following DRBC Dockets:

DOCKET NO.	APPROVAL DATE
D-1969-152-1	September 27, 1972
D-1969-152-2	November 8, 1972
D-1969-152-3	July 31, 1974
D-1969-152-3 (amend)	June 17, 1975
D-1969-152-3 (amend 2)	December 17, 1975
D-1969-152-3 (amend 3)	December 8, 1976
D-1969-152-3 (amend 4)	March 30. 1977
D-1969-152-3 (amend 5)	July 1, 1977
D-1969-152-3 (amend 6)	November 30, 1977
D-1969-152-4	March 23, 1978
D-1969-152-3 (R77-8)	April 27, 1977
D-1984-038-1	December 12, 1984
D-1984-038 (Phases II &II)	September 22, 1987
D-1988-026-1	May 25, 1988
D-1993-063-1	May 24, 1995
D-1993-063-2	July 19, 2006

Several of the project facilities are located in the 100-year floodplain. The Commission's *Flood Plain Regulations* (FPR) has requirements for treatment facilities in the flood plain; however, the FPR only apply in the non-tidal portion of the Delaware River Basin. Since the project IWTP is located in the tidal portion of the basin, the FPR do not apply to the project IWTP.

c. **Water withdrawals**. The water withdrawals for the Bridgeport Disposal facility were most recently approved by DRBC via Docket No. D-1972-049-2 on May 10, 2006, which approves up to 0.09 million gallons per month or 270,000 gallons per quarter of water from one (1) surface water intake on Raccoon Creek and up to 17.86 mg/30 days from 21 remediation wells.

d. **NJPDES Permit / DRBC Docket**. Draft NJPDES Permit No. NJ0005240, issued by NJDEP on December 9, 2011, includes effluent limitations for the project discharges from the IWTP to Water Quality Zone 4 of the Delaware River. Note: The limits apply to Outfall No. 001A (current IWTP outfall) and Outfall No. 001B (Emergency outfall) – though the facility has not discharged and does not expect to discharge from Outfall No. 001B. The following average monthly effluent limits and monitoring requirements are among those listed in the NJPDES permit and meet or are more stringent than the effluent requirements of the DRBC.

EFFLUENT TABLE A-1: DRBC parameters included in NJPDES permit

OUTFALL Nos. 001A & 001B		
PARAMETER	**LIMIT**	**MONITORING**
pH (Standard Units)	6 to 9 at all times	As required by NJPDES permit
Total Suspended Solids	30 mg/l	As required by NJPDES permit
Fecal Coliform	200 colonies per 100 ml	As required by NJPDES permit
BOD (5-Day at 20^{o} C)*	25 mg/l 31.75 kg/day 85 % minimum removal **/***	As required by NJPDES permit
Ammonia Nitrogen	35 mg/l (Daily Max.)	As required by NJPDES permit
Acute WET LC50 Stat 96 hr (Ceriodaphnia)	Monitor only	As required by NJPDES permit
Chronic WET IC25 Stat 7 day (Ceriodaphnia)	Monitor only	As required by NJPDES permit
Total Dissolved Solids*	22,727 kg/day (avg. mo.) 34,093 kg/day (daily max) 1,000 mg/l***/****	As required by NJPDES permit

* See Condition II.s. in the Decision section

** When the wastewater influent is less than 100 mg/l, the 85% removal requirement is waived and the maximum BOD5 effluent limitation shall be 20 mg/l (daily maximum concentration).

*** DRBC requirement

**** See Condition II.t. in the Decision section

The following average monthly effluent limits and monitoring requirements are DRBC parameters not listed in the NJPDES permit.

EFFLUENT TABLE A-2: DRBC parameters not included in NJPDES permit

OUTFALL Nos. 001A & 001B		
PARAMETER	**LIMIT**	**MONITORING**
CBOD (20-Day at 20^{o} C)*	100 lbs/day 89.25 % removal	Monthly

* See Condition II.s. in Decision section

B. FINDINGS

This docket renews and updates the approval of the Bridgeport Disposal IWTP. The IWTP discharges a long-term average flow of 0.61 million gallons per day (mgd). On July 19, 2006, the DRBC approved Docket No. D-1993-063-2 for the IWTP discharge at a long-term average flow of 0.47 mgd. This docket (Docket No. No. D-1993-063-3) approves a long-term average flow of 0.61 mgd for the IWTP discharge, based on current, updated IWTP flow data. No modifications to the IWTP facilities are proposed.

The Bridgeport Disposal IWTP currently discharge treated wastewater effluent to Delaware Water Quality Zone 4. DRBC Water Quality Regulations (WQR) include stream quality objectives for Zone 4, including criteria to protect the taste and odor of ingested water and fish (Table 4 of WQR), to protect aquatic life (Table 5), and to protect human health (Tables 6 & 7). Toxicity in effluent is measured as Whole Effluent Toxicity (WET), and results from both acute and chronic exposures. The acute toxicity stream quality objective for Zone 4 is 0.3 Toxic Units (TUa = 0.3). The chronic toxicity stream quality objective for Zone 4 is 1.0 Toxic Units (TUc = 1.0).

Regulatory Mixing Zone (RMZ) and Associated Dilution Factor

Section 4.20.5.A.1. of the WQR states that:

"In establishing wasteload allocations and other effluent requirements, exceedances of stream quality objectives for the protection of aquatic life from acute effects may be permitted in small areas near outfall structures, provided that all of the following requirements are met:

a. As a guideline, the dimensions of the area where objectives are exceeded should be limited to the more stringent of the following structures:

1). A distance of 50 times the discharge length scale in any direction from the outfall structure, or
2). A distance of 5 times the local water depth in any direction from the outfall structure.

b. Stream quality objectives shall not be exceeded in areas designated as critical habitat for fish and benthic organisms.

c. Stream quality objectives shall not be exceeded where effluent flows over exposed benthic habitat prior to mixing with the receiving waters.

d. A zone of passage for free-swimming and drifting organisms equal to 50% of the surface width of the river at the location of the discharge shall be provided.

e. The total surface area of the Delaware River Estuary where stream quality objectives for the protection of aquatic life from acute effects are exceeded shall be limited to: 5% of the total surface area of Zone 2, 3 & 4."

The discharge length scale referred to in Item a. above is defined in Section 4.20.5.B.2. of the WQR as the square root of the discharge cross-sectional area. The outfall diffuser ports are each 8.1 inches in diameter (0.675 ft). The discharge cross-sectional area of each port is 0.357 ft^2. The local water depth at the outfall structure is 14.0 ft (4.27 meters). The resulting dimensions for the guideline mixing zone, referred to as the regulatory mixing zone, or RMZ, are calculated as the more stringent of:

1). $50 \times (\sqrt{0.357}) = 29.9$ feet (9.1 meters) per port
or
2). $5 \times 14 = 70$ ft (21.3 meters)

Therefore, the discharge length scale is the controlling factor to the dimensions of the RMZ. The total size of the RMZ is 29.9 ft (9.1 meters) long by 80 ft (24.3 meters) wide.

The docket holder performed an evaluation of their discharge for compliance with DRBC's acute stream quality objectives in February, 1998, entitled "Dilution Study at Laidlaw Environmental Services (Bridgeport) Inc. Outfall DSN001A" (Dilution Report). The Dilution Report evaluated the dilution received at edge of the RMZ, summarized above, and concluded that the critical one hour dilution factor of 19.3 to 1 (18.3 parts ambient and 1 part wastewater) is achieved by the existing outfall at the edge of the RMZ. DRBC staff concurred with the results of this evaluation, including the 19.3 to 1 dilution factor, in Docket No. D-1993-063-1, approved on May 24, 1995. The approval of the dilution factor and RMZ is continued via this docket (D-1993-063-3).

$CBOD_{20}$ Wasteload Allocation

The Commission's *Water Quality Regulations* (*WQR*) provide for the allocation of the stream assimilative capacity where waste discharges would otherwise result in exceeding such capacity. It was determined in the late 1960's that discharges to the Delaware Estuary be limited to a total of 322,000 lbs/day of carbonaceous biochemical (first stage) oxygen demand ($CBOD_{20}$). In accordance with the Regulations, the assimilative capacity of each Delaware Estuary zone minus a reserve was originally allocated in 1968 among the individual dischargers based upon the concept of uniform reduction of raw waste in a zone (Zones 2, 3, 4 and 5). The totals and percent reduction for each zone are given in Table 1 of the Commission's *Status of CBOD20 Wasteload Allocations* (Revised October 1, 2000). The Bridgeport Disposal IWTP is located in Zone 4 at River Mile 80.66 – 2.8 (Delaware River – Raccoon Creek). Zone 4 is allocated at 67,275.5 lbs/day of $CBOD_{20}$ and has a minimum percent removal requirement of $CBOD_{20}$ of 89.25%. The Commission approved a $CBOD_{20}$ allocation for the Bridgeport Disposal IWTP of 100 lbs/day on December 22, 1995. This docket will continue the approval to discharge up to 100 lbs/day of $CBOD_{20}$.

$CBOD_{20}$ Monitoring

The docket holder may request to establish a ratio between BOD_5 and $CBOD_{20}$ in order to reduce the required monitoring for $CBOD_{20}$ contained in the effluent tables in Section A.4.d. of this docket. The docket holder shall submit the request in writing to the Executive Director along with historical influent and effluent data for BOD_5 and $CBOD_{20}$ used to establish the ratio. Upon review, the Executive Director may modify the docket to require only BOD_5 monitoring or reduce the $CBOD_{20}$ monitoring frequency required within this docket (See Condition II.s. in the Decision Section).

The limits in the NJPDES Permit are in compliance with Commission effluent quality requirements, where applicable.

The project is designed to produce a discharge meeting the effluent requirements as set forth in the *Water Quality Regulations* of the DRBC.

The project does not conflict with the Comprehensive Plan and is designed to prevent substantial adverse impact on the water resources related environment, while sustaining the current and future water uses and development of the water resources of the Basin.

C. DECISION

I. Effective on the approval date for Docket No. D-1993-063-3 below, the projects described in Docket Nos. D-1969-152-1. D-1969-152-2, D-1969-152-3, D-1969-152-3 (amend), D-1969-152-3 (amend 2), D-1969-152-3 (amend 3), D-1969-152-3 (amend 4), D-1969-152-3 (amend 5), D-1969-152-3 (amend 6), D-1969-152-4, D-1969-152-3 (R77-8), D-1984-038-1,

D-1984-038 (Phases II &II), D-1988-026-1, D-1993-063-1, and D-1993-063-1are terminated and replaced by Docket No. D-1993-063-3, to the extent that they are not included in Docket No. D-1993-063-3.

II. The project and appurtenant facilities as described in the Section A "Physical features" of this docket are approved pursuant to Section 3.8 of the *Compact,* subject to the following conditions:

a. Docket approval is subject to all conditions, requirements, and limitations imposed by the NJDEP in its NJPDES permit, and such conditions, requirements, and limitations are incorporated herein, unless they are less stringent than the Commission's.

b. The facility and operational records shall be available at all times for inspection by the DRBC.

c. The facility shall be operated at all times to comply with the requirements of the *Water Quality Regulations* of the DRBC.

d. The docket holder shall maintain and make available to DRBC upon request, records identifying the sources, volumes and characteristics of all wastewaters and sludges treated at the IWTP, as well as the dates when off-site wastes were received and treated. Records are to be retained for 5 years, in accordance with (N.J.A.C. 7:14A-6.6).

e. The docket holder shall comply with the requirements contained in the Effluent Tables in Section A.4.d. of this docket. The docket holder shall submit the required monitoring results directly to the DRBC Project Review Section. The monitoring results shall be submitted annually, absent any observed limit violations, by January 31. If a DRBC effluent limit is violated, the docket holder shall submit the result(s) to the DRBC within 30 days of the violation(s) and provide a written explanation that states the action(s) the docket holder has taken to correct the violation(s) and protect against any future violations.

f. Except as otherwise authorized by this docket, if the docket holder seeks relief from any limitation based upon a DRBC stream quality standard or minimum treatment requirement, the docket holder shall apply for approval from the Executive Director or for a docket revision in accordance with Section 3.8 of the *Compact* and the *Rules of Practice and Procedure*.

g. If at any time the receiving treatment plant proves unable to produce an effluent that is consistent with the requirements of this docket approval, no further connections shall be permitted until the deficiency is remedied.

h. Nothing herein shall be construed to exempt the docket holder from obtaining all necessary permits and/or approvals from other State, Federal or local government agencies having jurisdiction over this project.

i. The discharge of wastewater shall not increase the ambient temperatures of the receiving waters by more than 5°F above the average 24-hour temperature gradient displayed during the 1961-1966 period, nor shall such discharge result in stream temperatures exceeding 86°F.

j. This docket continues the approval of a regulatory mixing zone (RMZ) consisting of an area 29.9 ft (9.1 meters) long by 80 ft (24.3 meters) wide downstream, and along the centerline of the existing outfall diffuser. The total regulatory mixing area for the outfall is 2,400 ft^2 (or 221.1 m^2). The dilution factor at the edge of the RMZ is 19.3 to 1.

k. The docket holder is permitted to treat and discharge the categories of wastewaters defined in the "Area Served" section of this docket.

l. The docket holder shall make wastewater discharge in such a manner as to avoid injury or damage to fish, wildlife, and/or other aquatic life and shall avoid any injury to public or private property.

m. No sewer service connections shall be made to newly constructed premises with plumbing fixtures and fittings that do not comply with water conservation performance standards contained in Resolution No. 88-2 (Revision 2).

n. Nothing in this docket approval shall be construed as limiting the authority of DRBC to adopt and apply charges or other fees to this discharge or project.

o. The issuance of this docket approval shall not create any private or proprietary rights in the waters of the Basin, and the Commission reserves the right to amend, suspend or rescind the docket for cause, in order to ensure proper control, use and management of the water resources of the Basin.

p. A complete application for the renewal of this docket, or a notice of intent to cease the operations (withdrawal, discharge, etc.) approved by this docket by the expiration date, must be submitted to the DRBC at least 12 months prior to the expiration date below (unless permission has been granted by the DRBC for submission at a later date), using the

appropriate DRBC application form. In the event that a timely and complete application for renewal has been submitted and the DRBC is unable, through no fault of the docket holder, to reissue the docket before the expiration date below, the terms and conditions of this docket will remain fully effective and enforceable against the docket holder pending the grant or denial of the application for docket approval.

q. The Executive Director may modify or suspend this approval or any condition thereof, or require mitigating measures pending additional review, if in the Executive Director's judgment such modification or suspension is required to protect the water resources of the Basin.

r. Any person who objects to a docket decision by the Commission may request a hearing in accordance with Article 6 of the Rules of Practice and Procedure. In accordance with Section 15.1(p) of the Delaware River Basin Compact, cases and controversies arising under the Compact are reviewable in the United States district courts.

s. The docket holder may request of the Executive Director in writing to establish a ratio between BOD_5 and $CBOD_{20}$ in order to reduce the required monitoring contained within this docket approval. Upon review, the Executive Director may modify the docket to reduce or eliminate the $CBOD_{20}$ monitoring requirements contained in the effluent tables in Section A.4.d. of this docket.

t. The docket holder may request of the Executive Director in writing the substitution of specific conductance for TDS. The request should include information that supports the effluent specific correlation between TDS and specific conductance. Upon review, the Executive Director may modify the docket to allow the substitution of specific conductance for TDS monitoring.

BY THE COMMISSION

DATE APPROVED: **March 7, 2012**

EXPIRATION DATE: **December 31, 2016**